



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,955	12/10/2003	Clinton B. Carlisle	10021.001510 (P0225-1)	6785
31894	7590	07/26/2005	EXAMINER	
OKAMOTO & BENEDICTO, LLP			CONSILVIO, MARK J	
P.O. BOX 641330			ART UNIT	PAPER NUMBER
SAN JOSE, CA 95164			2872	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/731,955

Applicant(s)

CARLISLE ET AL.

Examiner

Mark Consilvio

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/15/2004</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of the claim for benefit of Title 35, United States Code, Section 120 of the United States provisional application 60/434,024.

### *Information Disclosure Statement*

The information disclosure statement (IDS) submitted on 3/15/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Brophy et al. (US Patent No. 6,275,623) (herein "Brophy").

With respect claim 1, Brophy discloses an apparatus comprising: a polarization diversity module (30) configured to receive an input optical signal and output a first optical output signal

Art Unit: 2872

and a second optical output signal, the first and second optical output signals having a same polarization state; and a light modulator configured to receive at least the first optical output signal (figs. 1 and 2).

With respect claim 2, Brophy discloses a collimator (24) configured to direct the optical input signal to a component of the polarization diversity module (30) (fig. 1).

With respect claim 3, Brophy discloses a birefringent crystal (32); and a polarization rotator (34) configured to change a polarization state of an optical output signal of the birefringent crystal such that the first and second optical output signals of the polarization diversity module have the same polarization state (fig. 2).

With respect claim 4, Brophy discloses the polarization rotator comprises a half-wave plate (fig. 2).

With respect claim 5, Brophy discloses the birefringent crystal comprises a yttrium vanadate crystal (col. 4, lines 63-65) (fig. 1).

With respect claim 9, Brophy discloses a diffraction grating (40) coupled along an optical path between the polarization diversity module (30) and the light modulator (50) (fig. 1).

With respect claim 10, Brophy discloses a transform lens (42) coupled along an optical path between the diffraction grating and the light modulator (fig. 1).

Claims 1 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Stowe et al. (US Patent Application No. 2003/0223748) (herein "Stowe").

With respect to claim 1, Stowe discloses an apparatus comprising: a polarization diversity module (415, 413) configured to receive an input optical signal and output a first optical output

Art Unit: 2872

signal and a second optical output signal, the first and second optical output signals having a same polarization state; and a light modulator (460) configured to receive at least the first optical output signal (fig. 4D).

With respect to claim 6, Stowe discloses the light modulator comprises a grating light valve.

With respect to claim 7, Stowe discloses the light modulator comprises a micro electromechanical system (MEMS) component (fig. 4D).

With respect to claim 8, Stowe discloses the MEMS component comprises an array of deflectable ribbon structures (500, 501, 502) configured to reflect or diffract incident light (fig. 5A-5D).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brophy et al. (US Patent No. 6,275,623).

With respect to claims 11-14 and 16, it is noted that the references do not expressly disclose the exact method of using the apparatus as limited by claims 1-3, 9, and 10. However, these method steps do not require any additional structure beyond that taught or suggested by the references and stated supra. Therefore, at the time the invention, it would have been obvious to

Art Unit: 2872

one of ordinary skill in the art to perform this method in light of the structure taught by the references.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stowe et al. (US Patent Application No. 2003/0223748).

With respect to claims 6-8, it is noted that the references do not expressly disclose the exact method of using the apparatus as limited by claims 1 and 6-8. However, these steps do not require any additional structure beyond that taught or suggested by the references and stated supra. Therefore, at the time the invention, it would have been obvious to one of ordinary skill in the art to perform this method in light of the structure taught by the references.

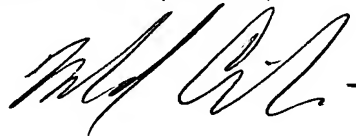
### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Consilvio whose telephone number is (571) 272-2453. The examiner can normally be reached on Monday thru Friday, 8:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2872

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



*Mark Consilvio*  
USPTO Patent Examiner  
Jefferson, 3C21 AU-2872  
(571) 272-2453



**DREW A. DUNN**  
**SUPERVISORY PATENT EXAMINER**